

AUTHORS Eades, C.J. and Hintz, W.E.
TITLE Characterization of the class I alpha-mannosidase gene family in
the filamentous fungus *Aspergillus nidulans*
JOURNAL Gene 255 (1), 25-34 (2000)

AUTHORS	Maras,M., Callewaert,N., Piens,K., Claeysens,M., Martinet,W., Dewaele,S., Contreras,H., Dewerte,I., Penttila,M. and Contreras,R.
TITLE	Molecular cloning and enzymatic characterization of a <i>Trichoderma</i> reesei 1,2-alpha-D-mannosidase
JOURNAL	J. Biotechnol. 77 (2-3), 255-263 (2000)

AUTHORS Yoshida,T. and Ichishima,E.
TITLE Molecular cloning and nucleotide sequence of the genomic DNA for
1,2-alpha-D-mannosidase gene, msdC from *Penicillium citrinum*
JOURNAL Biochim. Biophys. Acta 1263 (2), 159-162 (1995)

AUTHORS Inoue,T., Yoshida,T. and Ichishima,E.
TITLE Molecular cloning and nucleotide sequence of the
1,2-alpha-D-mannosidase gene, msdS, from *Aspergillus saitoi* and
expression of the gene in yeast cells
JOURNAL Biochim. Biophys. Acta 1253 (2), 141-145 (1995)

Penicillium.citrinum	-----MRLP-VSFPLTVLSLLG-STIAHP-YGETEAVLRSEPKSNQAKADAVKEAF	48
Aspergillus.saitoi	-----MHLPSLSLSLTALAIAS-PSAAYPHFGSSQPVHLHSSDDTTQSRADAIAKAF	50
Mns1B	-----MRTLLALAAAFAGFAAARVPAYAITRPVMRSD-----SRADAVKEAF	41
Trichoderma.reesei	-----MRFP-----SSSVLALGLIG-PALAYPKPGATKRGSPNP-----TRAAAVKAAF	43
Mns1C	RTSTGGFNGWEIPVRYPVSDFIPLSTNSPATLPRIQRSSFPQLSS-----ITKSRQAQAVKGA	118
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Penicillium.citrinum	QHAWNGYMKYAFPHDELTPVSNHGADSRNGWASAVDALSTAVIMGKADVNNALIEHVAD	108
Aspergillus.saitoi	SHAWDGYLQYAFPHDELHPVSNNGYGDSSRNGWASAVDALSTAVIMRNATIVNQILDDHYGK	110
Mns1B	SHAWDGYNYAFPHDELHPISNGYGDSSRNHWGASAVDALSTAIMMRNATIVNQILDHIAA	101
Trichoderma.reesei	QTSWNAYHHFAFPHDDLHPVSNSSFDERNGWGSSAIDGLDTAILMGDADIIVNTILQYVPQ	103
Mns1C	QRAWTSYTHAWKADEVRPITAGSRNNGFGWGATLVNDLDTLLIMGLDEFAAAVDALD	178
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Penicillium.citrinum	IDFSKTSDDT-----VSLFETTIRYLGLAGMLSGYDILLQGFPAKNLVNDQDLIDGLLDQSRNL	162
Aspergillus.saitoi	IDYSKINTT-----VSLFETTIRYLGLGMLSGYDILLKGFVSDLVQNSSKIDVLLTQSKNL	164
Mns1B	VDYSKTNAM-----VSLFETTIRYLGLAGMISGYDILLKGPAGLVDD-SRVDVLLQSQNL	154
Trichoderma.reesei	INPTTTAVANQ-----SSVFETNIRYLGLLLSAYDILLRGPFFSSLATIQTILVNSLLRQAQTL	160
Mns1C	IEFSPHSSPSSSQSTINIFETTITIRYLGLLAAYDLTG-----CRETRLDKATQL	228
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Penicillium.citrinum	ADVLKFAFDTPSGVPYNNINIT-SHGND-----GATTNGLAVTGTVLVLEWTRLSDLTGDEEY	218
Aspergillus.saitoi	ADVLKFAFDTPSGVPYNNINIT-SGGND-----GAKTNGLAVTGTTLALEWTRLSDLTGDTTY	220
Mns1B	AEVLKFAFDTPSGVPYNNINIT-SGGND-----GATTNGLAVTGTVLVLEWTRLSDLTGNDY	210
Trichoderma.reesei	ANGLKVAFTTPSGVPDPTVFVFNPTVRRS-----GASSNNVAEIGSLVLEWTRLSDLTGPNQY	217
Mns1C	GEMIYTSFDTENRMPVPRWNLHKAGNGEPQRAAVQGVLAELASSSLEFTLRSQLTGDMRY	288
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Penicillium.citrinum	AKLSQKAESYLLKPQPSSEBFPGLVGSININDQGFAD-SRVSWNGGDDSYEYLIKMY	277
Aspergillus.saitoi	ADLSQKAESYLLNPQPKSAEFPGLVGSININISNGQFTD-AQVSWNGGDDSYEYLIKMY	279
Mns1B	ARLSQRAEDYLLHPEPAQYEPFGLIGSAVNIADGKLAN-GHISWNGGADSYEYLIKMY	269
Trichoderma.reesei	AQLAKGSESYLLNPK-GSPEAWPGLIGTFVSTNSNGTFQD-SGSWSGLMDSFYEYLIKMY	273
Mns1C	FDAASR-ITDLLDSQAGHTR-IPGLWPVSVNLQKGLDTRGSTFSPGGMADSAEYELGKTY	346
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Penicillium.citrinum	VYDP--KRFETYKDRVWVLAESTIKHLKSHPKSRPDLTFLSS-----YSNR-NYDLSSQH	329
Aspergillus.saitoi	VYDP--KRFGLYKDRVWVAAQSTMQHLASHPSSRPDLTFLAS-----YNNG-TLGLSSQH	331
Mns1B	YDYP--ERFGLYKDRVWVAAESSINHLASHPSTRPDVTFLAT-----YNEHQGLGNTSQH	322
Trichoderma.reesei	LYDP--VAFAYHKDRVLGADSTIGHLGSHPSRTRKDLTFLSS-----YNGQ-STFSPNSG	327
Mns1C	RLGCVGKGPQYERLARNALDAGIRHLLFRFMTPDHADILLPGVAHATSSSVGLEPRTTEH	406

